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ART. XXVI.—*Mineral Resources of Southern India. No. 8. Diamond Tracts. By* LIEUT. NEWBOLD, F.R.S., &c., *Madras Army.*

(*Read June 18th*, 1842.)

THE diamond tracts of India lie between 13° and 25° N. lat.; they occur in irregular arid patches, sometimes basin-shaped, in hilly districts on the great elevated plains bordering the more considerable rivers that have an easterly and southerly course to the Bay of Bengal. Diamonds of considerable size are not rarely found in the sands of these streams and of their tributaries; but their geognostic situs must be referred to the sandstone and sandstone conglomerate, which will be described at more length in the detailed accounts I am about to offer of the various localities in which this gem occurs, commencing with those of the Ceded Districts on the southern limit of the great diamond area just mentioned.

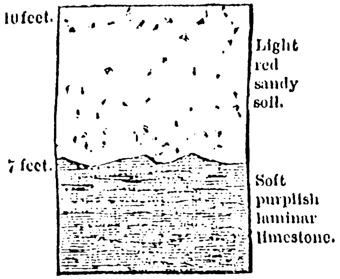
Diamond Mines of the Ceded Districts.

[1] The Ceded Districts originally formed part of the empire of Golconda, the capital of which is situated about 140 miles north from their present frontier. This tract included within its limits many of the diamond mines, for which Golconda has been celebrated over the whole habitable world. The localities in which they were principally dug were Ovalumpully; Condapetta, in the Chinoor-taluk, on the banks of the Pennar, about six miles from Cuddapah; at Lamdoor and Punchatgopadoo; at Banganapilly, on the Kurnool frontier; at Ramulacota and other places in Kurnool; and at Munimudgoo, north of Gooty. The mines of Condapetta I visited from Cuddapah, only a few miles north of which the Pennar runs. Crossing the river at Chinoor, which was then nearly dry, (February,) and the sandy bed occupied by verdant melon gardens, I passed on to the little village of Condapetta, where a guide was procured. We traversed a plain, partially cultivated, extending between the foot of the Nalla Malla hills and the river: the chain here has an easterly direction, running nearly parallel with the left bank of the river; it is of sandstone, passing into arenaceous and argillaceous slates. The hills do not anywhere in this vicinity rise more than 1000 feet above the level of the plain, which is here about 507 feet above the level of the sea. The tract between the

base of the hills and the Pennar is, apparently, about two miles across, and the diamond mines are situated in it nearly three quarters of a mile from the former. The surface of the soil is strewed with both rounded and angular quartz and sandstone pebbles. Heaps of these rolled stones and gravel announce the vicinity of the excavations.

On approaching the mines, I was accosted by a Brahman and several of his attendants, who earnestly requested that I would leave my horse behind, as his presence might interfere materially with the success of some mystic rites, which they were then in the act of performing, for the propitiation of the tutelary genius that watched over the treasures of the earth, preparatory to opening some new excavations. (A similar superstition prevails also among Malayan miners, to whose prejudices I was, on a former occasion, compelled to pay deference, by dismounting and walking some distance through a muddy jungle, on a visit to the tin mines in the interior of the Malayan peninsula.) On a nearer approach, I observed some undug ground already marked out as the scene of future operations. The implements of the sacrifice were also prepared: two stout iron divining rods were firmly planted in a vertical position, at a little distance apart, in small recently dug square apertures in the ground, in which were deposited stones, smeared with red and yellow paint, placed upright. The smoke of the incense-pots thickened and perfumed the air. The Brahman had been for some time past consulting his books and making astrological calculations, watching the aspect of the planets for a propitious day and moment for the opening of the mines: this had been fixed on as the auspicious time. The sacrifices were made to Lakshmi, the goddess of fortune. Near the spot marked out for the new excavations lay the old pits, which are extremely numerous, covering an apparent extent of more than a square mile, surrounded by heaps of stones and gravel. They are generally of a square form, and from four to twelve feet deep. The stratum cut through is of cotton soil, mixed with small grains of quartz, generally from three to ten feet thick, which rests immediately on a bed of rolled stones of various sizes, from that of a paving-stone to a nut, in which the diamonds are found generally loose, but sometimes adherent. The stones are mingled with mud and gravel. The pebbles most commonly met with are ferruginous, gritty, and schistose sandstone; sandstone conglomerates, imbedding rolled pebbles of quartz, chert, and jasper; claystone porphyry, with crystals of felspar; blue jasper veined with oxide of iron; coarse red jasper; and quartz crystals. Some of these pebbles have evidently been transported from the adjacent hills, but the porphyritic and felspathic pebbles must have travelled a much greater distance. Near the base of the hills the cotton soil is covered with the red gritty earth, arising from the disintegration of the sandstone rock. Nearer the river it becomes thinner, and is replaced by the light sandy soil drifted by the wind and monsoon freshes. Below these soils a purplish laminar limestone extends nearly to the base of the hills; and it is not improbable the diamond alluvium rests upon it. This purplish limestone overlies the blue compact variety. No. 1 is a section of the plain between the diamond mines and the river. No. 2 is a section afforded by one of the old diamond excavations.

No. 1.



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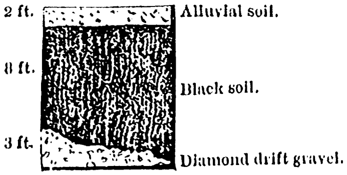

The process of mining consists merely in digging out the rolled pebbles and gravel, and carrying them to small square reservoirs, raised on mounds, having their bottom paved with stones, and washing them carefully. At the foot of the mound is a clear space, surrounded by heaps of refuse, where the washed gravel is again carefully spread out and examined in presence of the diamond contractors; the diamonds are easily recognised in this moist state, by their peculiar lustre. These mines are let out by the government to native contractors, who gave me the following information on the spot:—In 1834 the mines proved profitable, but in the following year the miners lost a considerable sum. The sum paid to government by them for the privilege of mining a piece of ground 100 yards long by 50 broad, for four months, is 200 rupees[1]. Dry weather is selected to carry on operations, to avoid the inconvenience and expense of draining. In former days all the diamonds produced were carried for sale to Golconda. In those times very large diamonds were found; but, subsequent to British ascendancy—which, according to the superstitious natives, is by no means pleasing to the tutelary deities of the mines—few of any value have been found, probably in consequence of their being less looked after. However, lately, in 1839, a fine diamond, of the Kshatriya or roseate caste, was dug from the Ovalumpully mine, exceeding a gold pagoda in weight, which was sold for 1450 rupees.

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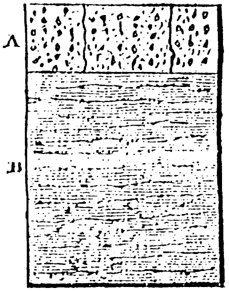
[1] In 1840 the contract rose to about 250 rupees. When a diamond of more than a gold pagoda in weight (=52·56 grs. at Madras) is found, it is sold by public auction, and one-third of the proceeds goes to government, the remainder to the mining contractor.

Diamond Mines of Banganapilly.

The diamond mines of Banganapilly are situated in a low range of hills, scarcely attaining 150 feet in height, about half a mile west from the fort, and of circumscribed extent. These hills are composed of a highly crystalline and ferruginous sandstone, interstratified with beds of a conglomerate, consisting of quartz, chert, and jasper pebbles: I did not observe any of basalt, the plutonic, or hypogene rocks. The beds are nearly horizontal, with a slight easterly dip. The rock, at the base of the hills, on which the conglomerate rests conformably, is the blue limestone, covered with regar or black cotton soil. The flat surface of the hills and sides near the summit have been completely broken up by the miners. The excavations are generally made through the sandstone, until one of the beds of conglomerate is reached, when they branch off for a short distance horizontally. The broken-up fragments of rock are removed, washed, and examined, as near Cuddapah. The diamonds shown me on the spot were small, and but imperfectly crystallized, both of the yellow and bluish varieties; they are cut into flat

No. 3.



A Diamond conglomerate.
B Dark-blue limestone.

As the greater proportion of pebbles in A are rounded, I have given it the name of conglomerate, rather than that of a breccia, which has been assigned to it.

planes, and set by artificers in the town. The mines, they say, were formerly productive, but have been latterly much neglected, owing to the profits hardly balancing the expenses. The Banganapilly mines do not belong to the Company—they are in possession of the Mohammedan Jaghirdar. The miners content themselves with searching the old mines, rarely venturing to the expense of fresh excavations.

Diamond Excavations of Munimudgoo.

The old diamond mines of Munimudgoo, a decayed fort and town situated among the hills about two koss off the main road, southerly from Puspulah, the last village in the Banaganpully jaghire, were found with some difficulty about a koss distant from the fort, on the left of the bullock road thence to Garuldinny. They had been dug on the inner side of a basin, formed by low hills of sandstone and conglomerate rising from the table land ascended from Puspulah, and some of them covered with a thick layer of black cotton soil. Limestone is interstratified with the sandstone at the base of the hills, and whole hills of it occur in the vicinity. The excavations were nearly choked up by bushes, having been deserted for upwards of thirty years. Conglomerates similar to those of Cuddapah and Banganapilly, fragments of sandstone and schist, were seen lying in the heaps of rubbish around the pits; there was not the slightest appearance of their having been lately resifted or turned over. The elaborately-built wells—now deserted—in the vicinity, and the former importance and wealth of the town of Munimudgoo, bear silent testimony to a state of former prosperity, probably resulting from the produce of the mines. The few remaining diamond cutters and polishers of Golconda are still to be found at this place. I obtained from them a model of their lapidaries' wheel, which has been presented to the Branch Society of Madras.

The ride to this place from Puspulah is remarkably interesting to the admirer of nature. The road, sufficiently rugged, lies at first through a wooded ravine, gradually ascending and winding among picturesque hills to an undulating table land, from which there is a delightful bird's-eye view of the surrounding country. The inferior hills were all flat-topped, indicating a similar formation to the table land of the hill just ascended, viz., sandstone, resting in nearly horizontal strata on a reddish and arenaceous slate, having a slight dip towards the east, and some of them capped with a stratum of rich régar. Underneath the flat sandstone summits of the hills the arenaceous slate generally rises in low ridgy cliffs, supporting the superincumbent plateau. The sandstone is both of the gritty and compact variety, and exhibits internal bands, evidently the result of successive aqueous depositions. Near the descent I observed angular blocks of a black crystalline trap, apparently the outgoings of a dyke, running parallel to the direction of the hills E. and W., but the thickness of the jungle precluded further investigation.'

Diamond Mines of Ramulacota.

These mines are situate in the Kurnool territory, about twenty-one miles S. of its capital, in the lower part of a basin-shaped plain, almost surrounded by low ranges of sandstone grit and conglomerate, resting in nearly horizontal stratification on the blue limestone of Cuddapah. The granite rocks bound this plain on the west, though at a considerable distance.

The present excavations occupy but a circumscribed portion of this extensive area—about one thousand square yards—and are dug, for the most part, in the detrital soil at the base of the rocks. Remains of old and extensive mines appear in a low adjacent ridge, composed of a dark ferruginous grit and conglomerate, and the rock has evidently been blasted. Diamonds of a very fine quality are said to exist in this conglomerate, but as they are few, and the labour and expense of blasting the rock great, the latter has been forsaken for the more easily-worked detritus, where the diamonds, though of inferior quality, are more numerous and attainable. The pits, though not occupying so large a superficies, are deeper and far more extensive than those near Cuddapah; the old excavations in the rocks resemble those of Banganapilly and Munimudgoo. The diamonds that were shown me here, one in the parent rock—the conglomerate, were of an inferior size, and but few crystallized in the octohedral form. They had, severally, white, grey, yellow, and greenish tints; but it was told me that those found in the conglomerate rock are generally of a superior description, with a fine roseate tinge. They are cut and polished by the jewellers of Munimudgoo, who have long been famous for their skill as lapidaries; they were formerly sent for sale to Golconda, and, subsequent to its fall, to Hyderabad. The process of mining and washing resembles what has been already described in speaking of the Cuddapah mines. There were about twenty natives engaged in these processes at the time of my visit. In the dry season 500 are usually at work: during the wet season, operations are suspended, from the pits becoming filled with water. The mines are rented (1839) by three contractors from the Nawab of Kurnool, for about 750 rupees per annum, who let them out in small lots to various minor speculators.

The usual hire of a labourer on the spot is four pice and a meal of rice per diem. The opening of a new mine presents an animated scene, which the late Nawab occasionally honoured by his presence. The difficulty of keeping the excavations clear of water is considerable to natives, in consequence of the basin-like superficies of the surrounding plain.

The nature of the conglomerate and sandstone identified them with the Banganapilly rocks. They imbed specular and magnetic iron ore in considerable quantity.

The alluvial beds overlying the diamond gravel bed are first a layer of reddish soil, succeeded by another of greyish-black soil, slightly calcareous, and traversed horizontally by bands stained with oxide of iron, having an aggregate thickness of from sixteen to twenty feet. The pebbles composing the gravel bed, which is from five to ten feet thick, are similar to those near Cuddapah, with a few scattered pebbles of basaltic greenstone: kankar is sparingly intermixed. Beneath the gravel is a red sandy stratum, below which the diamond is rarely found. There are old diamond excavations at Sartancota, Desnoor, and Tandrapand, all in the Kurnool territory.

Diamond Tracts near the Kistna River.

Other lines a little north of the present boundary of the Ceded Districts, though within the limits of Golconda, are found on the banks of the Kistna, in the vicinity of Condapilly. Voysey states them to occur in a plain formed by the alluvium of the river, bounded by granite, and that the nearest hills to them, two miles off, consist of a mixture of quartz, felspar, hornblende, and mica. He goes on to say, however, that he was not able to find in the rubbish of the mines any substrata resembling them; and we may fairly conclude the diamond alluvium of the Kistna to be brought down from the hills of limestone and sandstone through which the river has recently passed. And indeed Voysey himself remarks, that the only stone common to all the mines he has visited is the conglomerate. The mine of Malavali, twenty miles S.E. of Purtyal, is said to lie on granite, and to be surrounded by that rock. The sandstone conglomerate, however, is the rock with which the diamonds are here immediately associated, as well as at Pulichinta, where one of the mines is situated on or near limestone. This mine and that of Malavali are the only ones in which diamonds are now sought for. No fresh excavations have been made for many years: the miners employ themselves in turning over, again and again, the old refuse. The old mines of Antior, Barthemi, and Pandoa, are all deserted. In the Malavali alluvium, sandstone conglomerate, chert, jasper, iron ore, quartz, felspar, and kankar are found[1].

Diamond Districts of the Mahanadi River.

Diamonds of considerable value are also found in the bed and alluvium of the Mahanadi river, especially at Sambhalpúr, and about the mouths of the Hebe, Khelú, and Maund streams; but their beds have not hitherto, I believe, been traced. They also occur at Badrachellum, in the bed of the Godavery.

Diamond Mines of Bundlekhund.

The mines next in celebrity to those of Golconda are those of Pannah in Bundlekhund. They occur in a table land covered by a reddish soil, which lies over a bed of rolled pebbles of the sandstone formation in which the diamonds are found. The excavations rarely exceed fifteen feet in depth; they are still worked, it is said, with considerable profit. In the reign of Akbar they are said to have been estimated at eight lacs of rupees annually.

Remarks on the Origin of the Diamond.

With regard to the origin of the diamond, many speculations have been indulged. Sir Isaac Newton conjectured that it was probably an unctuous substance coagulated. Captain Franklin, adopting the theory of Sir James Hall on the consolidation of strata by heat, was of opinion that the crystal was produced in the gritstone by the action of heat and slow cooling, the carbonic acid being detained by compression under the weight of the strata or a superincumbent ocean. He adduces no proof, however, of the strata in which the diamond is found having been subjected to the influence of heat, beyond the conjecture of a bed of coal lying 400 feet below the diamond bed. Sir D. Brewster, who first attributed its origin, like that of amber, to the consolidation of vegetable matter, and was of opinion that it gradually acquired its crystalline form by the influence of time and the slow action of corpuscular forces, and denied that the compressible state of the diamond, as evinced by the air it contains, could arise from the action of heat, as manifest from the nature and recent formation of the soil in which it is found, has subsequently stated that the discovery of a new matrix of the diamond takes away the foundation of the argument from which he concluded that the compressible state of the gem could not arise from heat; for it is possible, he says, that the rocky matrix in which it was found (the sandstone) had an igneous origin. Captain Franklin, on whose statement Sir D. Brewster rests his argument, mentions a conjecture, as before mentioned, of there being a bed of coal underlying the 400 feet of sandstone on the surface of which the diamonds are found; but even admitting this, there are no veins of coal hitherto discovered in India that would affect 400 feet of a solid rock with the degree of heat supposed. But neither in the mines of Golconda nor in those of Brazil do we trace the slightest fragment of coal, although we admit the possibility of its existence in the vicinity. The diamond alluvium of Brazil consists of pebbles, a ferruginous sandstone, and sandstone conglomerate, associated with iron ore, and resting on chlorite or clay-slate; as also that of Borneo.

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[1] Benza's Notes, Madras Journal Lit. and Science for Jan., 1837, pp. 48-9.

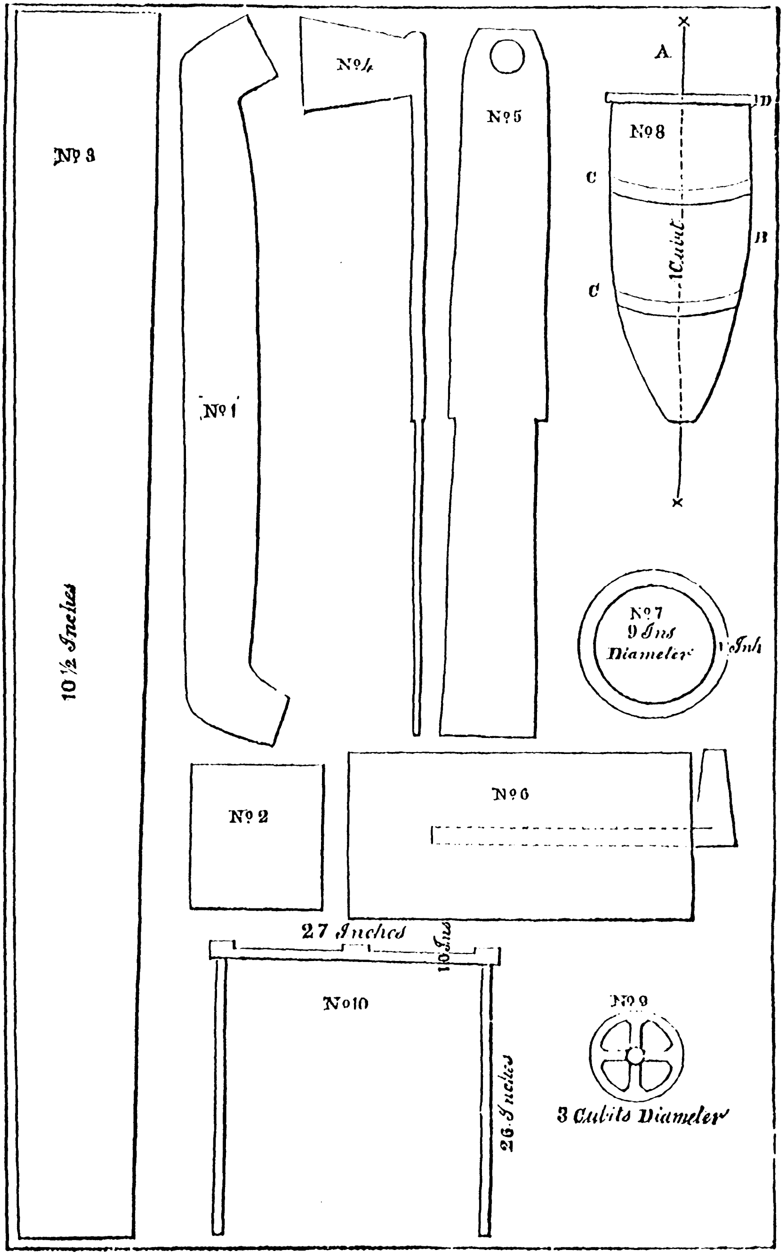
It is now a generally-admitted fact, I believe, that, from the permanent contact of rocks of a different nature, not only a displacement and new arrangement of their elements may be occasioned, but even minerals formed, the elements of which were not suspected to exist previously in either of the rocks. This influence, though heightened by, is also found to be independent of, heat and light. Garnets, analcime, epidote, tourmaline, are produced in veins in gneiss near its junction with granite; and tremolite, garnets, and pyrites, in lias where it meets with the latter rock. Metalliferous veins and nests occur in greatest abundance whenever granite comes in contact with the secondary rocks. The diamond, as has been already demonstrated, is invariably found associated with a sandstone conglomerate, or sandstone, often at or near its junction with limestone,'and in the vicinity of granite elevations or greenstone dykes. These rocks are not always apparent, but their vicinity and influence are surely indicated by the presence of the conglomerate, which has been formed by the breaking up of the calcareous and arenaceous strata at the time of the soulèvement—a fact proved by the nature of the pebbles imbedded, which are generally of the chert, flint, and jasper, into which limestone and sandstone are seen to pass when they come in contact with the granite boundary or with greenstone dykes. The carbon—the element of which the diamond consists—is not only found in the carbonic acid combined with the limestone, but exists in the dark varieties in a dark carbonaceous matter, which, together with iron, imparts the colouring matter to the rock, and also in the coal-veins which may exist in the vicinity; it is also present in the black soil we often see as a superstratum covering the diamond alluvium. The secretion or concretion of the carbon, in its pure crystalline state, appears, in those instances where it has not been accelerated by heat, to bear analogy to the process by which we see pure silica (tabáshir) secreted at first as a soft gelatinous mass, in the tender joints of the bamboo. The formation of diastase, of which we cannot discern the slightest trace in the germ, and tuber itself, round the eye of the potato, is still more difficult to be accounted for. I have witnessed a sort of catalysis in the talc slate of India, by which its constituents are separated and undergo a disintegration into a soft earth, in which minute adamantine particles have been found converging into crystallized nuclei of corundum. It is fully proved, I think, from the experiments of Sir David Brewster, that the diamond has once been in a soft state like amber, opal, or the tabashir just alluded to. Minute cavities, surrounded by a compressed structure, analogous to those in the Laske diamond, are seen in several specimens of the Indian gem that have been brought me by the diamond merchants.

In corroboration of what has been just conjectured regarding the possibility of the concretion of the diamond without the stimulus of heat, I may state, that there is a universal opinion of the continual reproduction of this gem among the most experienced Indian miners from Bundlekhund to Cuddapah, which I was at first inclined to place little reliance upon, but which I have been subsequently inclined to listen to; not only from finding, by experience, almost all their ideas on similar subjects, however startling at first sight, to be based on truth, but from actually witnessing diamonds extracted in tolerable abundance from old mines which had long been given up and neglected as worn out. At Banganapilly and Muddenpilly the miners content themselves with examining the old mines, rarely making fresh excavations. The inferior size of the diamonds found at the present day may perhaps be accounted for, in part, by the over-cupidity of the natives, which will not permit the old mines to remain undisturbed for any considerable length of time. The old miners stated to me, that a term of fifteen or twenty years was requisite for the reproduction of the gem. The ideas of the natives will not appear so strange when we see zeolites, tabashir, crystals of lime, quartz, felspar, and corundum, now in process of formation, and when we reflect that there is no obvious reason why the causes —excepting the supposed heat evolved by newly-raised plutonian rocks—that originally existed for the production of the diamond, should now be at an end, and no longer continue to operate in nature.

As previously stated, diamonds of great value are seldom discovered in India; the largest, lately procured at Pannah, was valued at 400*l.* sterling. Fine diamonds still continue to be got in the vast island of Borneo. The Sultan of Mattan, on this island, is said to possess the largest diamond now existing in the world, with the exception of that mentioned by Tavernier of 900 carats, now no longer to be found; it weighs 367 carats, and is shaped like an egg, with an indented hollow at one end. The mines of Landak, in Borneo, are said to produce at present about 1900 carats per annum. The celebrated Pitt, or Regent, diamond has been erroneously stated to have been found at Malacca. During a residence of three years at that place, I made several inquiries on the subject from the Malay and Chinese miners, and also from the old Dutch and Portuguese inhabitants; but they all affirmed that diamonds never have been discovered there at all, and that the diamond in question, which is considered the most perfect of any that has hitherto been discovered, was sold to Mr. Pitt, of Bencoolen, in Sumatra, by a merchant from Borneo. It was sold by him to the Duke of Orleans for 130,000*l.*, and placed among the crown jewels of France. Its value is said to be half a million sterling. The statement of the Malays, of Malacca not producing diamonds, is borne out by the nature of the formation in its vicinity, which is a stanniferous granite overlaid by laterite.

It has been said that the ancients were ignorant of the art of cutting diamonds, and were accustomed to use them rough, as found in the mine. Haüy affirms, that it was not until A.D. 1456 that the art of polishing these gems, by rubbing one against another, was discovered by a citizen of Bruges, named Louis Berquen. This artist is also said to have invented the lapidaries' wheel, to the circumference of which, by applying diamond powder with grease, he was enabled not only to polish the diamond, but to cut it into facets. The Egyptians, however, according to Sir Gardner Wilkinson, lay early claim to the discovery of the lapidaries' wheel: and the diamond polishers of India aver, that the wheel about to be described was in use among them long prior to the Mohammedan invasion.

The following is a description of the apparatus which has been used, time out of mind, by the diamond polishers of Munimudgoo, a place where most of the diamonds found in the Pennar district were polished, and sent to Golconda for sale. No. 1 is a piece of wood six inches long, in the ends of which a fine diamond point is cemented by melted lac, to mark the rough diamond before it is cut into plates for polishing. No. 2 is a thin bit of highly tempered steel, with which the diamond is split after having been


No 3
10½ Inches
No 1
No 4
No 5
A
D
No 8
C
B
1 Cubit
C
No 7
9 Ins
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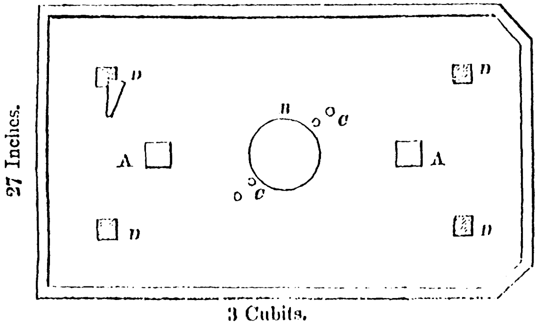
1 Inch
No 6
No 2
27 Inches
10 Ins
No 10
26 Inches
No 9
3 Cubits Diameter

No. 11.



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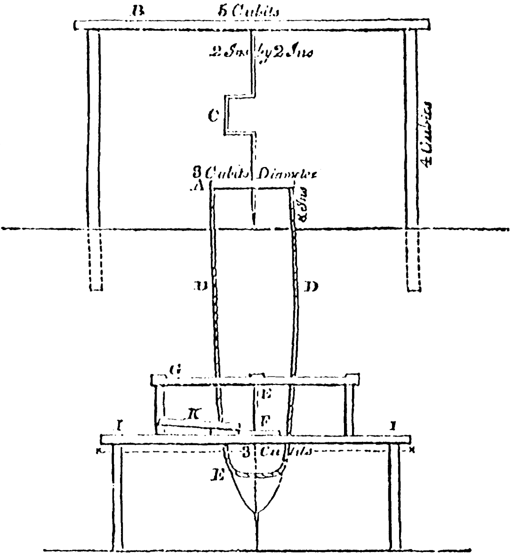
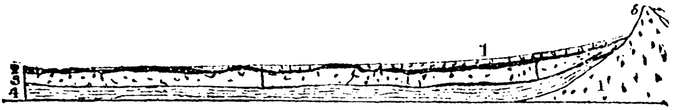


marked by No. 1. No. 3 is a mallet of heavy wood with which No. 2 is forcibly struck upon the diamond. No. 4 is a small iron anvil, one inch high; diameter at top three-quarters of an inch, at bottom, half an inch, fixed on a piece of iron six inches long, three-quarters of an inch broad, and about one-eighth of an inch thick. It has a basin-like depression at the top, in which the diamond, after being split, is fixed with melted lead and lac. No. 5 is a front view of No. 4. The diamond thus mounted is fitted firmly, by means of a wedge, into a groove, made in an iron box, No. 6, about nine inches square and one inch thick, and is now ready to be applied to the polishing-wheel, No. 7, which is of iron, nine inches in diameter, and one inch thick. A little diamond-dust is thinly sprinkled on its surface; it revolves horizontally on the cap of a square iron spindle, No. 8 A, a cubit long, passing through a sugar-loaf-shaped block of wood, No. 8 B, which is made to revolve rapidly, by means of a strap or rope passing round the grooves, No. 8 CC, and communicating with, and passing round the grooved circumference of, a wooden wheel, No. 9, three cubits in diameter, which is made to revolve horizontally, by means of an iron winch passing through its centre, worked by the hand, and fixed in a wooden frame, whose legs are firmly inserted into the ground. The spindle and block, No. 8, on the cap of which the iron polishing wheel, D, rests, is fixed in a frame of wood, No. 10, twenty-six inches high and twenty-seven broad, the legs of which are inserted into a heavy wooden stool, No. 11, twenty-seven inches broad, three cubits long, and eight inches thick, supported on four legs, three cubits long. AA are the two orifices in which the legs of the framework, No. 10, are inserted; B, the orifice in which the spindle-block, No. 8, and polishing wheel, revolve; CC, holes by which the diamond, when fixed in the grooved box, is applied to the surface of the polishing wheel, at a greater or less distance from its circumference, by means of pins. DDDD represent raised plates of iron, for fixing the iron anvil when soldering the diamond to it. No. 12 is a section of the whole apparatus when put together. A is the wooden horizontal wheel fixed in the frame, B, and made to revolve horizontally by the winch and spindle C. DD represent the rope or strap passing round the grooved circumference of the wheel A, and communicating the motion to the spindle and block E, on whose cap revolves the iron polishing wheel F. G is the wooden frame in which the top of the spindle, H, which, passing through the block, E, revolves. I is the wooden stool before described; and K represents the grooved iron box holding the diamond to be polished to the circumference of the iron wheel F.

Hindu Classification of the Diamond.—The Hindu miners apply the great divisions of castes to the different varieties into which they have classed the diamond, viz.:—

The white variety is said to be of the Brahman caste.
— roseate . . . . Kshatriya.
— yellowish . . . . Vaisya.
— blackish or bluish . . Sudra.

Remarks on the Age of the Diamond Formation, and its relative Position to other Rocks.—The diamond in India cannot be traced to any older formation than that of the sandstone and its associate conglomerate, in which it has been found imbedded, or in sitû, by Dr. Heyne, at Banganapilly, and by myself at Ramulacota, in Kurnool. This sandstone formation has been classed by Franklin with the new red sandstone of England, but referred by Malcolmson to the more ancient secondary or even transition rocks[1]. Neither of these opinions can, in the present state of our knowledge, be deemed conclusive. No organic remains have hitherto been discovered, either in the sandstone or the subjacent limestone; though it is probable such exist, and diligent search should be made for them, in order to solve the interesting point of the age of the great diamond formation of India. Suffice it here to observe that, lithologically speaking, the sandstone often closely resembles that of the Devonian group of England, with its associated arenaceous and argillaceous schists; and that, although it covers, with the subjacent limestone, large areas in almost horizontal layers, still, at the edges of the great plains of Cuddapah and Kurnool, it is seen resting, in highly-inclined stratification, immediately on granite, as shown in the subjoined diagram.



1 Alluvial granitic detritus.
2 Regar or black soil, overlying occasional drifted gravel patches, among which diamonds are found scattered.
3 Sandstone and diamond conglomerate.
4 Blue limestone.
5 Granite.

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[1] Madras Journal of Lit. and Science for July, 1840, p. 95.